

Safety in Numbers

Using Statistics to Make the Transportation System Safer

Draft Action Plan

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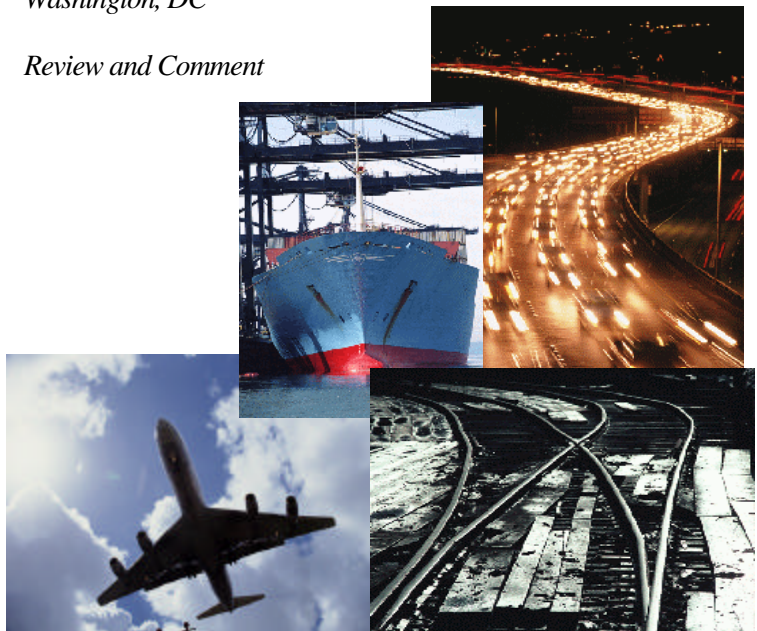


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Safety Data Action Plan

Using Statistics to Make the Transportation System Safer

I. Introduction

Four Safety Data Workshops were convened in September and October 1999 by the Department of Transportation (DOT) as part of the *Safety in Numbers Project*. Approximately 200 stakeholders participated, representing the diverse interests of the transportation community such as non-profits, associations, private sector, government (state, local, and federal), advocacy organizations, and academia. This project was developed in response to the Secretary's 1999 National Transportation Safety Conference where stakeholders identified better data collection and reporting across all jurisdictions as one of the top priorities to improve safety. The project also supports the DOT Strategic Safety Goal – “Promote the public health and safety by working toward the elimination of transportation-related deaths, injuries, and property damage.”



Each of the *Safety in Numbers Workshops* was organized generally along “modal” lines – one each for marine and aviation, and two for surface transportation. However, the feedback from these workshops demonstrated many consistent concerns and themes, as summarized in the “priorities for next steps” developed at the conclusion of each workshop. Workshop participants worked together to discuss and assess the current data system, the impact of this system on safety policy and decision-making, and the desired future state where better data would provide a more complete picture of the transportation system.

II. Summary

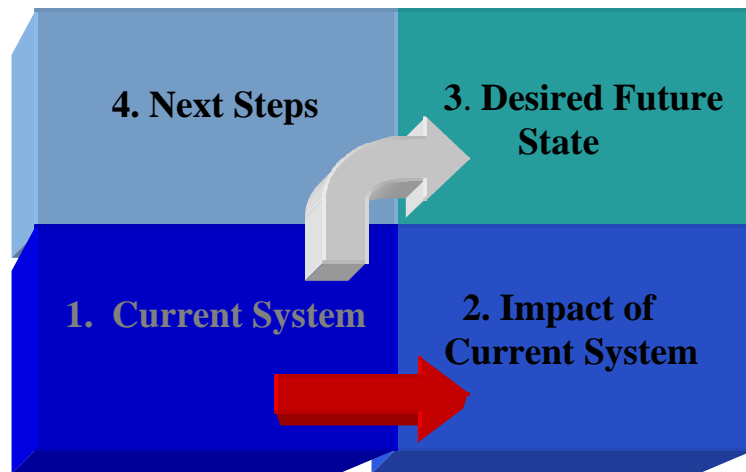
Overall, participants felt that changes were needed in the current approach to safety data collection, analysis, and application. Lack of timeliness, relevancy, and problems with data quality were cited consistently across workshops. A vast majority of participants agreed that to continue to improve the safety of the transportation system there needed to be sweeping improvements. Visions of a desired future state included a user-friendly system that provides “one-stop shopping” for transportation safety data

and research, integration of the latest technology and automated data collection, “real time” data collection and analysis, and national – and eventually international – data standards, and a national effort to monitor and continue to improve transportation safety data.

Key next steps identified by participants varied somewhat across the various workshops but centered around the following: continued and expanded involvement of stakeholder organizations (development of a national forum or working group), an assessment of data needs, development of data standards, increased data accessibility and education for data users, developing ways to examine safety intermodally, sharing best practices across the government and private sectors as well as across modal lines, developing incentives for data sharing (and removing legal barriers), applying technology and assessing procedures to increase timeliness, linking data sets, continued development of precursor data, and development of a variety of common denominators (see Table 1 below for more information on the planning process conducted to develop this Action Plan).

Table 1: Planning Process

In each of the modal workshops, participants first described the current data collection and analysis system and then discussed the impact of this system on safety-related decision-making. Following that session, participants envisioned what the desired future state of data collection would look like in order to make the transportation system safer. From that point, participants identified next steps that provided a bridge from the current system to a desired safer future.



III. Overview of the Action Plan

Following is an outline, or draft, of a plan that would address these priorities, which is divided into two sections. First, we have taken your input and examined what actions the Department of Transportation can take today to help to improve data that impacts safety; this is found in section 1. We feel it is vital to be proactive and responsive to the key issues raised during the workshop. Many of the issues and suggestions raised in the workshops are covered here, but not all are included.

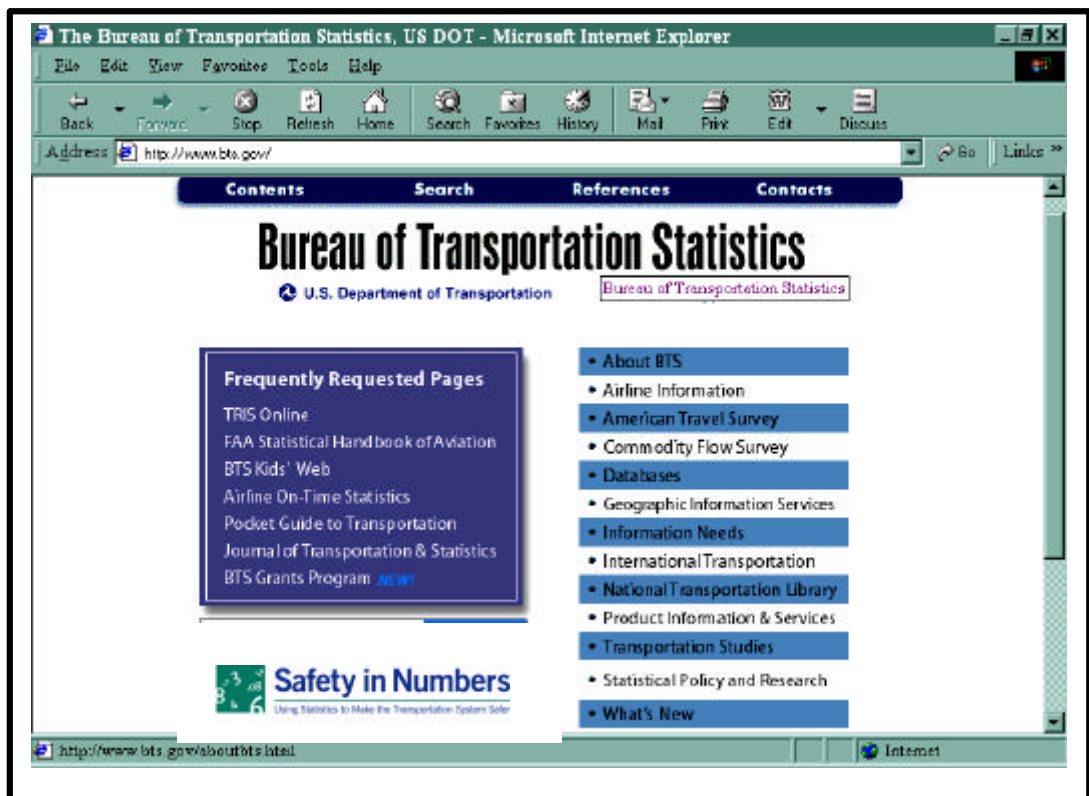
We would also like to take the opportunity at the conference to discuss how various stakeholder groups would like to be involved in this process; you will see this in section 2. Where important ideas appear to remain unresolved or additional input is needed, we pose these (at the end) as questions for attendees to the April 2000 Conference to help us address.

IV. Next Steps

This Action Plan will serve as an initial draft that will be posted on the BTS web site and shared with a wide range of stakeholder organizations for input and suggestions. On April 11, 2000 it will be the focus of the DOT's *Intermodal Safety in Numbers Conference* to be held in Arlington, VA. Over 400 participants have been invited from across the transportation sector to participate in this event. We are expecting over 220 participants at the conference and will be web casting the conference on the Internet. For those interested in viewing the live web cast, visit the BTS web site at <http://www.bts.gov> for instructions (see insert below), which will be posted starting March 24, 2000. At the end of this Action Plan you will find a comment form where you can respond electronically through the BTS web site or you can fax your comments to the Bureau of Transportation Statistics, c/o Equals Three Communications, (301) 652-5264.



View of BTS Web Site





Section 1

DOT's Commitment to Continue to Improve Safety Data

A. Overview

The DOT Safety Council has considered and approved the following general Action Plan for the Department. There are six key areas identified at the workshops that are addressed in the plan, which are described in greater detail below:

1. Establishing a Lead Agency and Ensuring Intermodal Collaboration
2. Developing an Intermodal Data Base
3. Developing Data Standards
4. Improving Data Quality
5. Expanding Transportation Resources
6. Conducting Focused Research Projects to Address Specific Shortcomings

This plan will be shared with stakeholders for additional input prior to and during the conference.

1. Establishing a Lead Agency and Ensuring Intermodal Collaboration

The Bureau of Transportation Statistics (BTS) will be the lead agency for the Department of Transportation to improve safety data. This is a natural extension of BTS' mission to lead in developing high-quality data and information and to advance its effective use in transportation decision-making. BTS reports to the Secretary, and will coordinate its work with the DOT Safety Council as well as with data experts from each modal administration. There will also be opportunity for stakeholders to provide input in this process. Key case studies of data improvements drawn from across the department and from stakeholders will be highlighted at the conference. All conference invitees have also been invited to submit brief case studies.

Department of Transportation Strategic Plan Values Statement:

"We are committed to excellence in transportation, and to that end, we will:

- *Ensure that all our work at DOT focuses on improving safety and the quality of life for all users of our national transportation system*
- *Listen to, learn from, and collaborate with customers on how best to address their needs"*

To provide a forum to address Intermodal issues, BTS will start the Committee on Transportation Statistics (CTSTAT), with the first meeting scheduled for March 30th of this year. This forum has already been established by the Deputy Secretary, with these aims explicitly in its charter. The Director of BTS will chair the CTSTAT, and members of the committee will be drawn from the senior leadership of the Department.

Background. Across three of the workshops, participants recommended that the Department of Transportation “designate a lead agency” to coordinate efforts across all modes to improve data. Many organizations also expressed an interest in providing input and working to help improve data, which will be discussed in greater detail at the *National Safety in Numbers Conference* in April.

Benefits. BTS’s role in coordination will provide a centralized point of contact at DOT for constituents to provide helpful suggestions and feedback, to stay abreast of the progress of the DOT Safety Data improvement project, and to facilitate sharing best practices across the department.

Timing. The Safety Council has already approved BTS’s role and the CTSTAT’s first meeting will be March 30th. Following (on page 8) are the initial research projects, which will be planned and implemented through CTSTAT.

2. Developing an Intermodal Data Base

The Intermodal Transportation Data Base (ITDB) will provide the organizing system for a combined safety database, including a comprehensive data element dictionary. The ITDB is mandated by the Transportation Equity Act for the 21st Century (TEA-21), to provide a common repository for key transportation data. The system’s general design will include transportation data from all DOT data systems, contextual data from others, linkages across data elements, web-based access, and online data documentation and descriptive statistical tools.

Background. Many workshop participants encouraged the department to provide Internet access to a standardized, central data base so they could have easy access to multiple data sets. Workshop participants called for ‘more information sharing,’ ‘ability to search multiple data bases,’ ‘compendium of niche sources,’ ‘creating a bridge to historical data,’ and ‘development of a data dictionary.’ Concerns were also expressed over how definitions vary across modes and by state and county.

Benefits. The ITDB will provide “one-stop shopping” for transportation safety data as well as provide a more in-depth look at comparability across modal data sets.

Timing. Work has already commenced on the ITDB, and a prototype will be unveiled and discussed at the April *Safety in Numbers Conference*. The CTSTAT will provide guidance for continued development of the ITDB, with Internet posting planned for fall 2000.

3. Developing Data Standards

CTSTAT will develop data quality standards that will provide benchmarks to guide the collection and use of transportation data within current data collection systems. These standards are also mandated by TEA-21. Existing standards from other federal statistical agencies will be used as a starting point.

Background. Participants from all workshops stressed the importance of evaluating current transportation data and developing standards within the current systems.

Participants called for "creating a set of standards with regard to terms, what to collect and analyze, and data storage and format." Discussion also addressed thresholds, e.g., when does an incident become significant; when should an injury be recorded.

Benefit. Developing standards will provide benchmarks against which the quality of current systems and comparability among them can be assessed. From these assessments, a roadmap can be developed that identifies fruitful areas for change, leading to systems that provide higher quality data for policy decisions and transportation planning.

Timing. Data quality standards are in the early stage of development and will be available for review on the BTS web site in fall 2000.

4. Improving Data Quality

One approach to improving data quality is the examination of data completeness and accuracy. However, this approach focuses on data already collected, and does not lay the foundation for higher quality in the future. This can only be accomplished by process improvement activities aimed at improving the quality of future data collected. Through CTSTAT, the current data collection systems will be assigned priorities and categorized, based on factors such as relevance to departmental performance measures and policy sensitivity. The highest priority category of data systems ('major data systems') will be analyzed in depth. In addition, quality control activities will be identified, cataloged, and made available to groups inside and outside the department.

Following this initial assessment of major data collection systems, areas for possible process improvement activities will be identified, working closely with the modal data collection organizations and data suppliers. As needed, proposals for process improvement will be developed along with resource estimates and estimates of expected benefits. Depending on available resources, activities will be undertaken and outcomes of these activities will be reported and disseminated. There will be a periodic review of data collection to keep the processes flexible and up-to date and to assure quality.

Background. Throughout the workshops participants drew attention to data quality. Both under-and over-reporting were mentioned, as well as inadequate uniformity in completing reports, exclusion of reporting requirements for some types of employees [contract versus full-time] and that all data are not reported. Participants commented 'there need to be better information on areas that is of a higher quality' and 'there needs to be better results.' Others indicated that 'accuracy is a challenge because of budgetary problems and different interests,' and that 'it is difficult to get accurate, undiluted information on human error and performance.'

Another related key issue mentioned was relevancy; participants wanted to ensure the right information was being collected and that data that was duplicative or no longer useful was not collected.

Benefit. Improved data quality will result in a more accurate picture of the transportation system and improved transportation safety decision-making.

Timing. CTSTAT will complete an assessment of data quality for the major data collection systems by winter 2001.

5. Expanding Transportation Resources

The National Transportation Library (NTL) will provide research material beyond data. The NTL is an online library providing reference materials, publications, reports, journal articles, and an index to abstracts on transportation research. NTL exists now, but remains to be expanded, particularly to include non-federal materials.

Background. Participants mentioned the need to access anecdotal and qualitative transportation research. Comments included that ‘extracting useful information, organizing it, and analyzing it is a problem,’ retrieval is a challenge,’ and that “the data and information that exist are not available for system wide use.’

Benefit. Expansion of the National Transportation Library will increase the dissemination of transportation research-related materials and resources.

Timing. The next phase of expansion of the NTL will be completed by fall 2000.

6. Conducting Focused Research Projects to Address Specific Data Shortcomings

With the support of the Bureau of Transportation Statistics and the Committee on Transportation Statistics, the Department will plan and conduct nine research projects to focus on addressing specific shortcomings:

1. Develop common criteria for reporting injuries and deaths

- Identify/inventory inconsistencies
- Develop consistent national definitions where states report the data
- Develop crosswalks for injury thresholds
- Develop common principles for circumstances of death/injury
- Standardize reporting of aggregate data based on 30-day criterion for deaths

2. Develop common data on accident circumstances

- Expand use of event recording technology
- Expand data collection to help draw comparisons across modes
- Reduce data collection to compensate for expansion above

3. Develop better data on accident precursors

- Identify options

4. Expand the collection of “near-miss” data to all modes

- Explore transferability from aviation to maritime, other modes
- Explore issues and options for data confidentiality
- Review whether BTS’ legislative protections can be extended to other DOT units.

5. Develop a variety of common denominators for safety measures

- Develop sources for estimates of exposure where we have gaps now (boating, bicycling, pedestrians, general aviation)
- Consider population, person-miles, person-hours, share of national death rate – as universal denominators for comparability (in addition to modal exposure measures)
- Develop sampling techniques for rate data

6. Advance the timeliness of safety data

- Explore options for monthly data with no more than one-month lag

7. Link safety data with other data

- Connect police & medical reports, EMS records, vehicle/driver records, and inspections
- Develop ITDB with web-based access
- Develop a DOT data dictionary

8. Explore options for using technology in data collection

- Bring together expert panel to brainstorm
- Consider remote sensing for VMT

9. Expand, improve and coordinate safety data analysis

- Evaluate modal approaches
- Create a mechanism for sharing best practices



Section 2

How The Transportation Sector Can Work Together to Improve Safety Data

A. Overview

The following key issues that require additional input from stakeholders were raised during the workshops and will be discussed at the National Conference in April.

B. Opportunity for Input

1. **Do you have any comments you would like to offer on the DOT commitment to improve safety data (see Section 1 of this proposal)?**
2. **Do you have any suggestions you would like to offer or innovative ways to approach any of the nine research projects (see the end of Section 2 of this proposal)?**
 - a). How would you like to be involved in the national effort to improve safety data?
 - b). How would you like to provide input? (i.e., via the Internet, forum, alliance, or workgroup)
 - c). What support could your organization offer?
 - d). What types of organizations do you think should be involved?
 - e). What top three issues should this group address?
3. **What process would you suggest for periodic review of the safety data?**
4. **What incentives would you suggest for better reporting?**

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Section 3

Gathering Comments and Feedback

A. Overview

Following is a brief comment form to gather your insights on the *Safety in Numbers* Action Plan. This Action Plan is only intended as a draft and we would greatly appreciate your insights and suggestions. The Background Information requested in Section B is optional and return information is included at the bottom of the next page (See Section E).

B. Background Information

(PLEASE TYPE OR PRINT ALL INFORMATION)

LAST NAME

FIRST NAME

TITLE

ORGANIZATION

CITY

STATE

ZIP

PHONE

FAX

E-MAIL ADDRESS (optional)

C. Mode of Transportation/Role

Please indicate which mode of transportation your organization represents (please check only one):

- ☐ Air ☐ Marine ☐ Rail ☐ Highway (car, small/ passenger truck)
☐ Transit ☐ Pipeline/Hazmat ☐ Across Modes ☐ Motor Carriers (large truck or bus)

In your current position, which best describes how you use data (please check only one):

- ☐ Data Collector ☐ Data Analyst/Statistician ☐ Policy Analyst/Decision Maker

D. Key Questions

1. **What are your comments regarding DOT's plan to improve transportation safety data, as outlined in section 1 of the Action Plan?**
2. **At the end of section 1 of the Action Plan there are nine research projects. What suggestions would you offer here?**
3. **Section 2 of the Action Plan focuses on how the transportation community can work together to improve transportation safety data. What suggestions would you offer and what feedback would you provide on the following questions that were listed there?**
 - a. How would you like to be involved in the national effort to improve safety data?
 - b. What process would you suggest for periodic review of the system?
 - c. What incentives would you offer for better reporting?
4. **At the April 11 *Safety in Numbers Conference* we would like to share best practices from across the transportation sector to highlight where improvements in transportation safety data have impacted safety and resulted in reducing injuries or saving lives. Please write a brief description of a project you were involved with and provide any necessary contact information.**

E. Return Information

Thank you for taking the time to provide your insights and comments on this project.

Please return this form via the Web using the reply form or print and fax your comments by April 4, 2000 to:

Safety in Numbers Intermodal Safety Data Conference
c/o Equals Three Communications
7910 Woodmont Avenue, Suite 200
Bethesda, MD 20814
Fax: 301-652-5264